Phytotherapy

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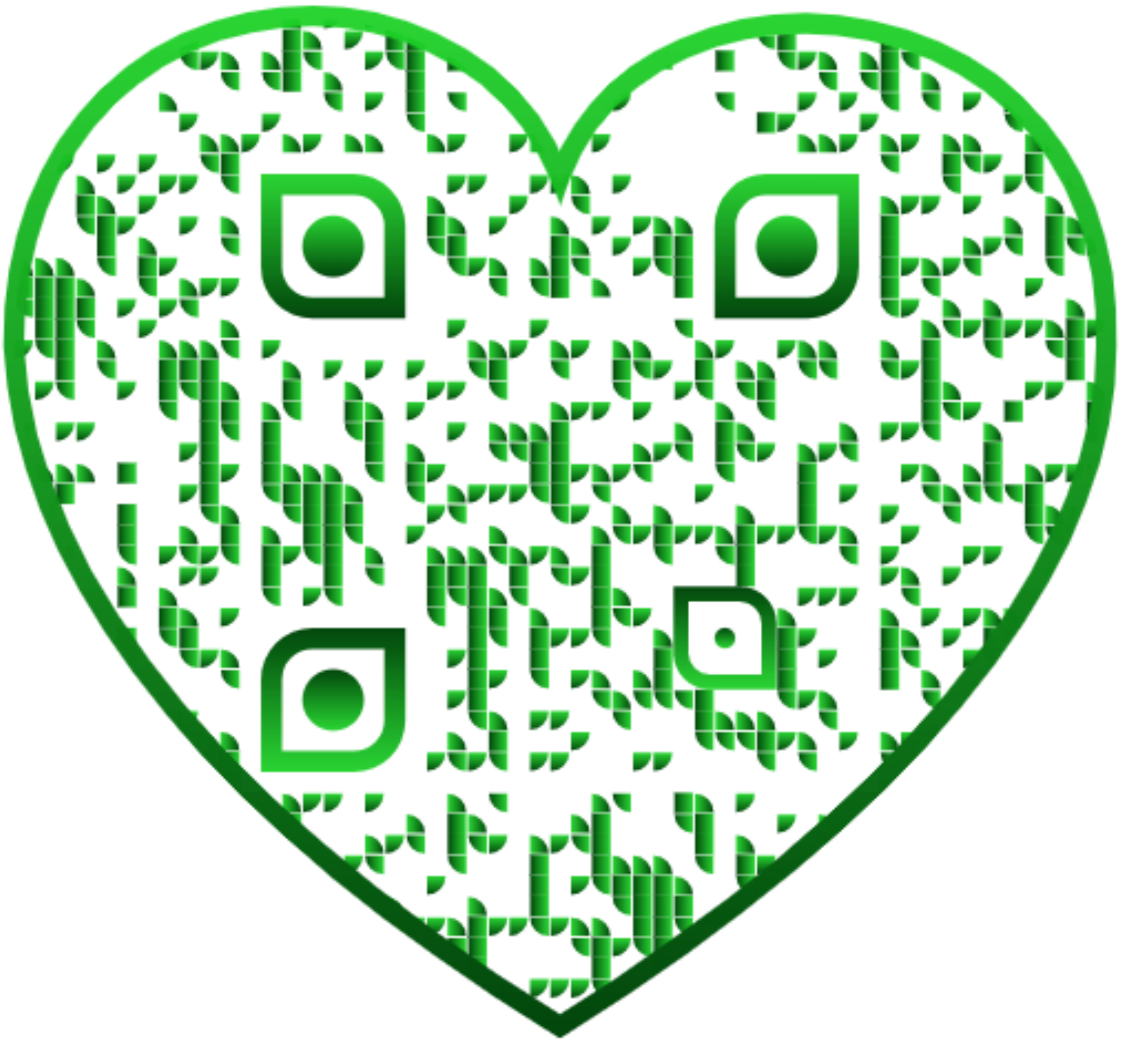

الموضوع :

التاريخ / / ٢٠٢

* Phytotherapy :-

⇒ is the branch of CAIM — فرع من الطب البديل

⇒ is the science which deal with treatment, diagnosis by using herbal medicine.

* Herbal medicine ⇒ science.

* Medicinal herbs ⇒ Product.

Plant metabolism

* Primary metabolism :-

⇒ essential for plant growth.

⇒ e.x: (starch, peptien, Protein amino acid, ω_3, ω_6).

* secondary metabolism :-

⇐ لا يحتاجها النبات الا عند الضرورة للدفاع او للحماية او وسيلة للبقاء.

⇒ C.X: (flavonoid, alkaloid, mucilage, tannine).

* Why we make formulation (Tablet, capsol, ...etc) for plant ??

-1- to separation of substance ⇒ active فعال - in active غير فعال

-2- remove for undesrible substance.

-3- Concentrated for active constituent.

* Dosage form :- أشكال الجرعة

1⇒ Traditional :

Tincture, syrup, tablet, Tea, decoction, infusion.

2⇒ Modern :

Capsule, tablet, powder, Cream, ointment, jells film coated tablet, sugar coated tablet.

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* Types of preparation :-

① plant juice :

→ must be fresh plant.

→ without any extract or solvent.

→ aqueous solution prepared from fresh plant.

② → medium for microorganism growth.

→ non stable.

③ distillation :-

→ we make it for volatil substance.

→ extract with water for internal use or with organic solvent for external use.

→ extract from fresh or dry plant.

→ has weak medicinal effect.

④ oily extract :-

→ less stable

→ decomposition by light.

⇒ is preparation obtained by dissolving fat soluble constituents of medicinal plant in oil.

e.x: olive oil , almond oil , peanut oil).

⑤ extract :- by use solvent :

* aqueous extract

- water as solvent
- safe, easy to prepare.
- use preservatives.
- medium for bacteria growth

* alcoholic extract :

- alcohol as solvent.
- Can dissolve aqueous and oily substance.
- without preservatives.
- has a long time.
- high polarity.

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تكملة أنواع المستخلصات :

* Tincture:
alcoholic extract with evaporat of solvent
* Flouid extraction:-
viscaus extract of alcoholic.
* dried extraction:- powder.

Medicinal Tea

* advantage:- easy to prepare
* disadvantage: difficult determine the dose.

* Types of tea preparation:-

① loose tea:- مثل البودرة زي الشاي اللي بنشربه

- affected by
  1- amount of active constituent.
  2- temprature of water.
  3- degree of grinding
  4- انتقال المادة الفعالة من نبتة إلى أخرى
- dose is not accurate.
- volatile substance may oxidation by air.
  قد يوجد خلل في عملية الاستخلاص

② Tea bags:- مثل أكياس شاي ليبتون

مميزاته:
- accurate dose.
- easy to use.

عيوبه:
- may oxidation or convert into toxic substance.
- volatil substance may loss during preparation.

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③ **instant tea :-**

شاي محلى (منه سكر)

← هذا النوع يكون جاهز للاستخدام .

← له خطورة لإمراض السكري والضغط : قد كوثر عليهم .

* **Method of tea preparation :-**

① **infusion :**

نقع في ماء ساخن (سخن الماء ، نخلط المادة منه)

② **decoction :-**

غلي ، نغلي المادة في ماء لمدة ١٠ - ٦٠ دقيقة .

③ **Maceration :-**

نستخدم الماء البارد . (نضع المادة في ماء بارد لعدة ساعات) .

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Important natural products and phytomedicins used in Pharmacy

-1- The gastrointestinal and billary system :-

1.1. Diarrhoea :

⇒ is sudden onset and short duration is very common especially in children

⇒ WHO : has estimated that approximately 5 million deaths due to diarrhea. (2.5 million in children under 5 years).

* علاج الإسهال :

① rehydration : by using sugar-salt solution.

② In adult : use opiates to reduce GIT motility. or use morphine or codeine.

③ Dietary fibers : including bulk forming laxative but with small amount of water. :-

* There are other plant drugs act in varying ways :-

ⓐ **Starch :**

is used for rehydration purposes and may be derived from rice, maize or potato.

also used as excipients for tablet production.

ⓑ **Tannin :**

are stringent polymeric polyphenols.

⇒ Tea and coffee are important herbs used in treatment of diarrhoea.

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1.2: Constipation :-

→ is often due to an ~~app~~ inappropriate diet and lack of physical activity.

* قد يكون الـ Constipation عادي او قد يكون بسبب وجود مرض خبيث مثل السرطان او غيره.

* Various types of plant-laxative are use :-

① stimulant laxative ② bulk forming laxative ③ osmotic laxative.

* قد يكون هناك انواع اخرى بسبب الإسهال مثل :-

abdominal cramp - dyspepsia - bloating and flatulence

* أثناء الـ (Constipation) لازم نعرف اولاً سببها ثم نعرف طريقة العلاج.

* خطوات علاج الامساك (Constipation) :- ← علاج آمنة

ⓐ Bulk-forming laxatives :-

إذا كان الـ Constipation متعلق بالـ life style يعالج بهذه الطريقة.

يعني ناخذ ألياف غذائية مثل السلطات مع كمية كبيرة من الماء.

ⓑ Osmotic laxatives :

إذا كان الـ Constipation بسبب عملية جراحية او جلطة او كبر السن لا نعطيه نبات السنا لأنه يتداخل مع ادوية القلب والضغط لذلك نعطيه الـ osmotic laxative اللي بيخلي فيها اللي يتحلل في الجسم.

* such as lactulose or lactose which are dimeric sugars derived from milk. widely used approach to the treatment of long term constipation. The bacteria of the colon metabolize this sugar.

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(c) Stimulant laxatives :-

=> These are anthraquinones such as emodin and aloe-emodin

=> Anthraquinones are found as glycosides in the living plant.

* Toxicity of anthranoid drugs :-

=> Senna :- both leaves and fruits are used.

=> Constituents :- leaf. Sennosides A and B.

1.3. Inflammatory GI conditions :-

1.3.1. Gastritis and ulcersinflammatorys :-

Inflammation of the gastric mucosa, or gastritis, is an acute inflammatory infiltration of the superficial gastric mucosa.

=> e.x : CHAMOMILE :- The flower head are used.

* constituents :-

1- essential oil. 2- Flavonoids.

3- Caffeic acid derivatives and spiro ethers are also present.

* Therapeutic uses and available evidence :-

1- Anti-inflammatory. 2- spasmolytic.

3- antibacterial. 4- antifungal effects.

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1.4. DYSPEPSIA AND BILIOUSNESS:-

⇒ are closely associated with eabits and are very common complaints.

⇒patients describe the symptome nausea, pain cramps, distension, heartburn.

*example:-

⇒ARTICHOKE:-

=The medicinal part is the leaves:-

*Constituents:-

(1) the bitter sesquiterpene lactone.
(2) several flavonoids.
(3) derivatives of caffeoylquinic acid

* Therapeutic uses and available evidence:-

1-Antihepatotoxic effects. 2-cholagogue activity.
3-triglyceride levels have been reported.
4-inhibition of cholesterol biosynthesis.

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1.5 NAUSEA AND VOMITING

Travel sickness' or 'motion sickness' caused by the repetitive stimulation of the labyrinth of the ear.

prophylactic treatment includes the use of antihistammines and the antimuscarinic hyoscine.

example:-

⇒ GINGER:-

=Ginger rhizomes are used.

*constituents:-

⇓

① essential oil ② phenolic compounds

③ The shogaols.

*Therapeutic uses and available evidence:-

1- Carminative. 2- anti-emetic.

3- spasmolytic. 4- antiflatulent.

5- antitussive. 6- hepatoprotective.

7- antipletelet aggregation.

8- antiulcer. 9- antioxidant.

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1.6: Irritable Bowel syndrome (IBS), Bloating and flatulence:

⇒ IBS: is characterized by pain in the left iliac fossa, diarrhoea and constipation, ~~symptoms~~, symptoms are usually relieved to some extent by defection or the passage of wind and can be treated by use (bulk laxative) with or without antispasmodic drug. يكتئان بز

⇒ flatulence:-

is the passage of excessive wind from the body,

is a condition for which phytotherapy offers useful therapeutic approaches.

* الأعشاب من أكثر استخداماً لعلاج الإنتفاخ:

* E.x: Peppermint:-

- The leaves & in the form of tea and the oil are used.

- Constituents:

essential oil - menthol . flavonoids - triterpenes. non volatil polyphenolics rosmarinic acid.

⇒

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USES :-

① Taken in the form of tea which provid a mild digestive soothing effect.

② Can be given with water or as emulsion for treating colic and G I cramp. in adult and children.

③ In the form of enteric-coated capsules for IBS.

④ antispasmodic effect

⑤ peppermint oil use to enhance gastric emptying.

* يمنع من الناس اللذين يعانون من المرارة (لعصارة الصفراوية) و كذلك عسر الهضم ..

1.7 : liver disease :-

⇒ **Turmeric , Curcuma**

used in asian medicine to treat liver disorders and well as inflammatory condition.

* الأشياء التي تعمل سمية في الكبد :

paracetamol - aflatoxin - cyclophosphamide

They protetect against stomach ulcer in rats and have antispasmodic effects.

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2. The Cardiovascular system :

2.1. Heart failure and arrhythmias :-

الربط بينهم : فشل القلب / عدم انتظام ضربات القلب .

⇒ These condition treat with cardiac glycosides such as digoxin, isolated from the foxglove.

- lily of the vally contains convallotoxin.

- The cardiac glycoside have a positive inotropic effect increase the force of contraction of the heart.

* E.x: foxglove (digitalis) leaf :-

⇒ The leaves are used

⇒ Constituents :-

Cardenolides, steroidal aglycones digoxin cardiac glycosides.

* Therapeutics uses and available evidence :-

- Digoxin increases the force of myocardial contractility and reduce conductivity within the atrioventrical node.

- used in treatment of supraventricular tachycardia and heart failure.

⇒ الجرعة :-

once daily in the range 62.5 - 250 mg.

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2.2. Venous insufficiency and circulatory disorders :-

⇒ Improvements in circulatory disorders arise from a number of different pharmacological effect.

- Plant drugs with these actions are important in tretment of :-

① haemorrhoids ② varicose veins ③ impaired visual acuity ④ memory enhancement.

* E.x. Ginkgo , Ginkgo biloba :-

- used in cases of pripheral arterial, improve blood circulation ,
- extracts have complex effect on isolated blood vessels ,
- The usual dose is 120 - 160 mg daily

2.3. Antiplatelet and anti atherosclerotic drug :-

Thrombosis and atherosclerosis are sedentary lifestyle, and high sugar

decrease platelet aggregation and inhibit thrombosis.

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* E.X. Garlic :-

=> garlic bulb (allium sativum) is composed of number of small bulbs or "clove".

=> Constituents :

① large number of sulphur

② alliin ③ allicin

* Therapeutics used :-

① hypolipidaemic activity

② Cardiovascular benefits are supported by antithrombotic activity.

③ reduce the incidence of cancer.

④ hepatoprotection against paracetamol.

* garlic has few sid effect *

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3. The respiratory system :-

= Systemic drugs :-

① • ephedra , ephedra spp .

is the source of ephedrin , ~~pseudo of~~ pseudoephedrine is most use.

⇒ Coustituents :

① ephedrine ② pseudoephedrine

* Therapeutic uses :-

asthma , bronchodilator , sympathomitic , anti inflammatory activity.

* Toxicological risks :-

① slimming aid

② ergogenic aid in sport

③ Case of exacerbation

② Theophylline : alkaloids في الاحتقان

3.1. Inhalation :-

⇒ essentical oil used aromatic compound as chest rubs, steam inhalation or nasal sparays , asthmatic and pregnant women for whow systemic decongestant - used orally , in pastilles , lozenges .

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* E.x. Camphor :-

- Combined with essential oil containing drugs as an stimulant and decongestant.
- Camphor has antiseptic, secretolytic and decongestant effect,
- small doses were formerly taken internally for cold, diarrhoea and other complaints.

* Toxicological risks :-

- In large quantities, Camphor may be absorbed through the skin.
- overdose causes vomiting, convulsions and palpitation, and can be fatal. #

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